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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/535,737	05/18/2005	Mads Sager	886A.0011.U1(US)	9391
29683	7590	07/12/2006	EXAMINER	
HARRINGTON & SMITH, LLP			TRAN, CHUC	
4 RESEARCH DRIVE			ART UNIT	
SHELTON, CT 06484-6212			PAPER NUMBER	
			2821	

DATE MAILED: 07/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/535,737

Applicant(s)

SAGER ET AL

Examiner

Chuc D. Tran

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 20 November 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 05/18/05
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Objections*

1. Claim 6 is objected to because of the following informalities:

Claim 6, line 3, "a" (strip) has been changed to - - the - -.

2. Appropriate correction is required.

### *Claim Rejections - 35 USC § 102*

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, and 3-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Tsubaki et al (USP. 6,300,909).

Regarding claims 1 and 12, Tsubaki et al disclose an antenna arrangement in Fig. 6 including:

- an antenna element (32); a load element (37) capacitively coupled to the antenna element (32) (Fig. 6); and

- a frequency adjusting arrangement for tuning the antenna element (Fig. 6), wherein the frequency adjusting arrangement comprises a switch (38) arranged to connect one of one or more strip lines to the load element (Fig. 6).

Regarding claim 3, Tsubaki et al disclose that the load element is a patch (Fig. 6).

Regarding claim 4, Tsubaki et al disclose that the antenna element is a patch (Fig. 6).

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Regarding claim 5, Tsubakiet al disclose that the switch is connected to at least two or more strip lines (Fig. 6).

Regarding claim 6, Tsubakiet al disclose that one of two or more of the switch is connected to the strip line of substantially zero length (Fig. 6).

Regarding claim 7, Tsubaki et al disclose that one of the strip lines, when coupled to the antenna element via the switch, provides a substantially open circuit at an operating frequency of the antenna arrangement (Col. 4, Line 53).

Regarding claim 8, Tsubaki et al disclose that one of the strip lines, when coupled to the antenna element via the switch, provides a substantially short-circuit at an operating frequency of the antenna arrangement (Col. 4, Line 52).

Regarding claim 9, Tsubaki et al disclose that one of the strip lines, when coupled to the antenna element via the switch, provides an impedance between a short and an open circuit at an operating frequency of the antenna arrangement (Col. 4, Line 45).

Regarding claim 10, Tsubaki et al disclose that at least one of the strip lines is connected to ground at its end opposite to the switch (Fig. 6).

Regarding claim 11, Tsubakiet al disclose that at least one of the strip lines is insulated from ground at its end opposite to the switch (Fig. 6).

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

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6. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tsubaki et al in view of Sjogren (USP. 5,917,385).

Regarding claim 2, Tsubaki et al disclose an antenna arrangement as set forth in the claims except the switch is a multiple throw switch. Sjogren disclose antenna control circuit in Fig. 5 comprising a switch (54) is a multiple throw switch (See Sjogren, Col. 5, Line 54); thus, it would have been obvious to one having ordinary skill in the art to modify Tsubaki et al by providing the switch is a multiple throw switch as taught by Sjogren. The ordinary artisan would have been motivated to modify Tsubaki et al in the manner described above for adjusting the RF signal line and for tuning the reactance antenna elements (See Sjogren. Abstract).

*Citation of relevant prior art*

Prior art Pankinaho et al (USP. 6,693,594) disclose optimal use of an electrically tunable multiband planar antenna.

Prior art Sievenpiper (USP. 6,864,848) disclose RF MEMS-TUNED slot antenna.

*Inquiry*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chuc D. Tran whose telephone number is (571) 272-1829. The examiner can normally be reached on M-F Flex hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy P. Callahan can be reached on (571) 272-1740. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TC  
July 8, 2006



**HOANG V. NGUYEN**  
**PRIMARY EXAMINER**